California Monthly Climate Summary
March 2008

Weather Highlights

March was an average-warmth, dry month for California. According to the Western Region Climate Center's California Climate Tracker, the monthly average temperature was 49.4°F which is the long-term average temperature for the state. With a statewide average of 0.53 inches, precipitation for March was 17.7% of the long term average. Out of the 114 years of record in the California Climate Tracker, March 2008 ranks as the 5th driest.

March started with a weak system passing over northern California. Tightening surface pressure gradients yielded gusty winds across the state with some gusts reaching 50-55 mph in the Kern County deserts and mountains. Low humidities caused cooler than normal low temperatures. High pressure resided over California for most of the second week of March with Bakersfield recording its first 80+ °F high temperature since November 7, 2007. Towards the end of the second week a weak cold front passed over the state increasing clouds, cooling temperatures, and causing more gusty winds. Precipitation fell in the northern mountains and north coast. Thunderstorms in the San Joaquin Valley resulted in hail up to 0.75 inches in diameter in some places. Snowfall was recorded in the southern Sierra and Tehachapi Mountains. High pressure returned for the third week of March broken by a couple of passing systems. A stronger trough towards the end of the month brought the first measurable precipitation to Sacramento. More snow fell in the southern Sierra and Tehachapi mountains with snow levels falling to 5000 feet.

Preliminary records, reported on the National Weather Service Record Event Report, show that statewide there were 37 temperature records tied or broken and no precipitation records tied and broken for the month. Of the 37 temperature records, 23 were for new high maximums. Of the record low temperature records set, Eureka broke an 1896 record on the 31st of March with a low temperature of 30°F. The previous record was 31°F. Santa Maria tied a 1922 low temperature record on March 16th with a temperature of 32°F, and then tied a 1920 record on the 17th with a low temperature of 32°F. As for high temperatures, downtown Los Angeles tied a 1926 record of 88degrees on the 23rd of March. On the same day, Los Angeles Airport broke a 1929 record of 80°F with a temperature of 84°F.

For the California Data Exchange Center's (CDEC) network of temperature gages used in this report, 206 stations recorded a minimum temperature below freezing. Statewide extremes from the CDEC network of temperature gages are shown below. Also shown are the monthly average extremes from the CIMIS network. A table of regional average minimum, mean, and maximum temperatures from the CDEC and CIMIS networks is also shown.

Precipitation in March was limited. The largest amount of precipitation recorded in the CDEC precipitation gages for March 2008 was Gasquet Ranger Station on the

North Coast with 10.24 inches. This is 92% of the average monthly precipitation at this station. At the other end of the spectrum, 13 stations recorded no rain for the month. Bakersfield recorded a trace of precipitation which tied for the second driest March on record. Only 1934 was a drier March for the city when no precipitation fell. For the CIMIS network, Union City in Alameda County topped the precipitation charts with 1.15 inches for the month. Twenty-three stations in the CIMIS network recorded zero for precipitation for the month. The 8-Station Index for northern California precipitation recorded 1.45 inches in March with twelve days showing precipitation. On average 6.9 inches of precipitation is recorded for the 8-Station index in March. This is the 5th driest March in the 8-Station index period of record. Statewide, the average precipitation for March was 22% of the long-term average based on the California Data Exchange Center (CDEC) gages. Precipitation percentages by region from the CDEC gages are shown in a table at the end of this document.

The UC Merced/UC Santa Barbara snow covered area reports are back again for 2008. Conditions in 2008 are much better than 2007 when snow covered area had already begun to decline. Low elevation snow is much larger this year than last. High elevation snow cover however is less for the Feather, American, Tuolumne and Merced basins. More information is included in the full report on the state climatologist web page.

In March, the Drought Monitor showed improvement in southeast California after re-evaluating seasonal data. The maps for California for March 4, 2008 and April 1, 2008 are shown below. The Drought Monitor maps can be found on the National Drought Mitigation Center's (NDMC) website http://drought.unl.edu/dm/. These maps are largely a reflection of precipitation and soil moisture deficit estimates. Currently the California depiction has 44.5% of the state drought free, 23.9%listed in the D0 – Abnormally Dry, 27.8% listed in the D1 – Moderate Drought, and 3.8% listed in the D2 – Severe Drought category. Maps are updated weekly.

The U.S. Seasonal Drought Outlook for April through June from NOAA depicts California with persisting drought conditions in the Tulare basin and in the southeastern part of the state. Improvement is forecast for the northeastern corner of the state. Updates are provided twice per month. Maps and information can be found at http://www.cpc.noaa.gov/products/expert_assessment/seasonal_drought.html.

The Bulletin 120 is available online. This document reviews snow conditions in California and provides a forecast for April through July runoff for 22 basins. For the March 2008 edition, the largest percent of average forecast runoff is in the Kaweah River in the Tulare Basin with 112% of average. The lowest forecast runoff is the Tahoe basin with only 80% of average. The Bulletin 120 is issued 4 times a year in February, March, April and May.

Outlooks for the water year 2008 water supply index categories can be found in the executive update of hydrologic conditions. In March, the median Sacramento Basin outlook was dry and the median outlook for the San Joaquin Basin was below normal. Water supply information for California can be found at http://cdec.water.ca.gov/water_supply.html A Historical listing of water year categories for both basins can be found at http://cdec.water.ca.gov/cgi-progs/iodir/WSIHIST.

ENSO Conditions and Long-Range Outlooks

The El Niño/Southern Oscillation (ENSO) is being classified as a moderate La Niña pattern. Equatorial sea surface temperature anomalies for the tropical Pacific for February fluctuated between -0.4°C and -1.1°C. The January through March 3-month running mean of the Ocean Niño Index was the 7th consecutive 3-month running mean value to be below the threshold value of -0.5°C. The largest negative value in the series is the Jan/Feb/Mar value of -1.5. Both statistical and dynamical models forecast La Niña conditions continuing but weakening in the spring of 2008. More information can be found at the Climate Prediction Center's web site: http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ Updates are posted weekly. The latest three month outlook (March through May) from NOAA indicates an equal chance of above, below or near normal temperatures for most of the state with above normal temperatures expected for southern California except for the south coast which has an equal chance forecast. For precipitation, below average conditions are forecast for the southeastern corner of the state and an equal chance of above, below or near normal conditions for the rest of the state. Outlook plots and discussions can be fount at http://www.wrcc.dri.edu/longrang/. General weather information of interest can be found at http://www.noaawatch.gov/. For anomaly information please see http://www.wrcc.dri.edu/anom/cal_anom.html.

Agricultural Data

Agricultural activity picked up as spring arrived in California. Winter forage crops were cut for silage and carrots were harvested in Kern County. Across the state, farmer's market crops were harvested as well. Asparagus harvest began while citrus harvests picked up their pace. The navel orange crop was showing good volume. Alfalfa grew well and had its first cutting. Fruit trees bloomed and were being pollinated by bees. The almond bloom was completed in March with ideal growing conditions. Field preparation for vineyards, olive groves, and cotton took place. New blueberry bushes were planted while strawberries and sugar beets were growing well. Vegetable fields were weeded, irrigated and treated for mildew, insects and weeds. Good range conditions prevailed in March with supplemental livestock feeding continuing to decline. Cattle calving and goat kidding were completed and sheep shearing took place. For further crop and livestock information see http://www.nass.usda.gov/index.asp.

Other Climate Summaries
California Climate Tracker (new product of Western Region Climate Center)
Golden Gate Weather Service Climate Summary
NOAA Monthly State of the Climate Report

Statewide Extremes (CDEC)
High Temperature – 95°F (Buttercup, Colorado River Desert)
Low Temperature – -16°F (Casa Vieja Meadows, Tulare)
High Precipitation – 10.24 inches (Gasquet Ranger Station, North Coast)
Low Precipitation – 0 inches (13 stations)

Statewide Extremes (CIMIS)
High Average Maximum Temperature –82^{0}F (Seeley, Imperial County)
Low Average Minimum Temperature – 21.8^{0}F (Tulelake FS, Siskiyou County)
High Precipitation – 1.15 inches (Union City, Alameda County)
Low Precipitation – 0 inches (23 stations)

Statewide Precipitation Statistics

Hydrologic Region	Region Weight	Basin Reporting			Stations Reporting			% of Historic Average	
		Basins	Mar	Oct-Mar	Stations	Mar	Oct-Mar	Mar	Oct-Mar
North Coast	0.27	5	5	5	19	10	9	50.1%	94%
SF Bay	0.03	2	2	2	6	5	5	14.3%	98%
Central Coast	0.06	3	3	3	11	6	6	7.8%	101%
South Coast	0.06	3	3	3	15	10	9	6.8%	90%
Sacramento River	0.26	5	5	5	43	30	26	18.7%	84%
San Joaquin River	0.12	6	6	6	25	21	20	10.6%	85%
Tulare Lake	0.07	5	5	5	28	26	25	10.2%	86%
North Lahontan	0.04	3	3	2	14	8	7	21.7%	88%
South Lahontan	0.06	3	3	3	15	3	3	2.1%	93%
Colorado River	0.03	1	1	1	6	2	2	0%	112%
Statewide Weighted Average	1	36	36	35	182	121	112	22.7 %	90 %

Statewide Mean Temperature Data by Hydrologic Region (degrees F)

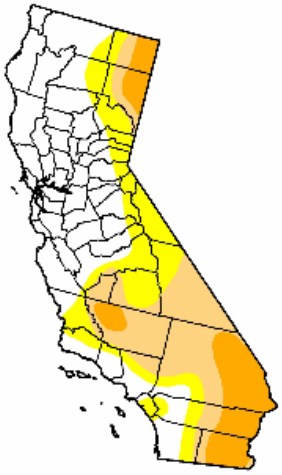
Hydrologic Region	No. Stations	Minimum	Average	Maximum
North Coast	33	25.2	43.3	66.6
SF Bay	17	37.5	51.6	67.2
Central Coast	36	36.8	52.3	70.9
South Coast	74	35.7	55.6	79.7
Sacramento	93	26.4	45.0	68.0
San Joaquin	74	28.9	47.0	67.2
Tulare Lake	19	13.5	38.1	62.6
North Lahontan	29	13.8	34.0	54.7
South Lahontan	21	21.3	42.7	64.1
Colorado River Desert	23	43.9	63.7	83.0
Statewide Weighted Average	419	26.7	45.5	67.7

U.S. Drought Monitor
California

March 4, 2008
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	44.5	55.5	34.3	13.3	0.0	0.0
Last Week (02/26/2008 map)	44.5	55.5	34.3	13.3	0.0	0.0
3 Months Ago (12/11/2007 map)	8.9	91.1	84.8	58.0	14.6	0.0
Start of Calendar Year (01/01/2008 map)	8.9	91.1	84.7	58.0	14.6	0.0
Start of Water Year (10/02/2007 map)	0.0	100.0	92.6	64.6	33.8	0.0
One Year Ago (03/06/2007 map)	25.4	74.6	54.0	28.8	0.0	0.0



Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements

http://drought.unl.edu/dm

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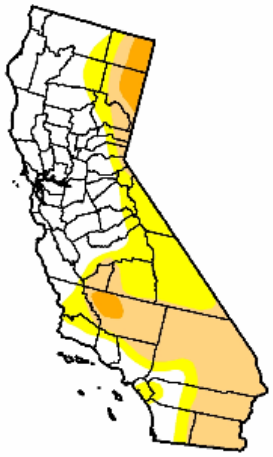
Author: Brian Fuchs, National Drought Mitigation Center

U.S. Drought Monitor
California

April 1, 2008
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	44.5	55.5	31.6	3.8	0.0	0.0
Last Week (03/25/2008 map)	44.5	55.5	30.1	3.9	0.0	0.0
3 Months Ago (01/08/2008 map)	11.4	88.6	79.8	31.6	0.0	0.0
Start of Calendar Year (01/01/2008 map)	8.9	91.1	84.7	58.0	14.6	0.0
Start of Water Year (10/02/2007 map)	0.0	100.0	92.6	64.6	33.8	0.0
One Year Ago (04/03/2007 map)	8.5	91.5	63.0	33.0	21.3	0.0



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http://drought.unl.edu/dm

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Author: Rich Tinker, CPC/NOAA